# CONFIRMED MINUTES

# IHRA SIDE IMPACT WORKING GROUP

# 1ST MEETING

# GOTHENBURG, SWEDEN

# 19 SEPTEMBER 1998

## ATTENDEES

| | |
|---|---|
| Keith Seyer | Federal Office of Road Safety, Australia (Chair) |
| Dainius Dalmotas | Transport Canada |
| Richard Lowne | EC/EEVC |
| Koji Mizuno | Japanese Ministry of Transport |
| Joseph Kanianthra | National Highway Traffic Safety Administration, USA |
| Robert Hultman | AAMA |
| Rainer Justen | ACEA |
| Takahito Uchimura | Japanese Ministry of Transport |
| Koshiro Ono | Japanese Ministry of Transport (Observer) |

## INTRODUCTION

The Chairman recalled the International Harmonised Research Activities Steering Committee meeting held before the ESV in Windsor, Canada in June 1998. At this meeting it was agreed that a new IHRA Working Group on side impact be formed and that Australia should be the lead country.

Mr Kanianthra advised that the French IHRA Steering Committee representative, Mr Medevieille had written to the IHRA Secretariat indicating that he did not believe it had been agreed that side impact group would go ahead. Mr Lowne recalled his notes from the June Steering Committee meeting indicating that it was agreed to form the Working Group but it would be re-confirmed after 6 months. Mr Kanianthra said the issue would be resolved at the IHRA Steering Committee meeting in November but that he expected the Working Group to continue. The unanimous position of the Working Group was that it should continue.

The Chairman said that at the previous day's meeting, it was agreed that the IHRA Biomechanics Group would be linked closely with the Side Impact Group's activities, particularly in the area of crash analysis to determine the injury and crash types in side impacts.

The Chairman asked each member to provide a summary of side impact research in their region.

## NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA )

Mr Kanianthra advised that NHTSA had developed a research plan that included both short and long term agendas:

- Short term work linked with Canadians
- IHRA program that was seen as more long term

The short term work would include:

- A closer look at EuroSID and the problems. He indicated that the problems had existed for 15 years. Unfortunately even the latest upgrades do not address “flat topping”.
- Human impact testing to look at injury criteria to examine if there was any need to add others and examining the need for a family of dummies.

Mr Kanianthra said that harmonisation need not mean the same requirement word for word where the fleet mix changes the situation from country to country.

A degree of harmonisation could be achieved if there was agreement on measuring device (dummies) and what is measured (injury criteria).

He said that an important outcome would be to ensure that vehicles did not need to be designed differently to meet different regulations.

Summary of NHTSA short term research work:

- Potential of the “Fixed” EuroSID as alternate dummy in FMVSS 214 in the future
- New cadaver data - examine TTI, VC, deflection, etc. to define best set of injury criteria
- Effectiveness of FMVSS 214 to finish by 2000 (pre and post standard analysis)

Mr Kanianthra said that going along the “Functional Equivalence” line was less favoured by the agency because of the major differences in the test procedures and the weights and sizes of the barriers, particularly in light of the recent fleet composition changes that are occurring in the United States (light trucks, vans and sport utility vehicles which are heavier that passenger cars are increasing), and that they would like an “Out of Position” test in regulation.

## TRANSPORT CANADA

Mr Dalmotas summarised the Canadian position as follows:

- Canada doesn’t have a standard but would like to put in a meaningful one.
- Looking at short and long term solutions.
- Major reservations regarding FMVSS 214 are about US SID and injury criteria.

- Short term NHTSA solution looks promising.
- Not looking at functional equivalency.
- First cooperative effort with NHTSA showed that ECE was generally more stringent.
- Fixed EuroSID 1 and European injury criteria as first stage .
- Wanted a harmonised regulation as soon as possible.
- Rear seats are where children travel. Transport Canada believes any standard must not compromise protection in the rear.
- Standard which Transport Canada adopts may not optimise for 50%ile.
- Transport Canada has a strong commitment to support IHRA activities.

**AAMA**

Mr Hultman summarised the AAMA position as follows:

- Short and long term solutions.
- Still behind the original petition to NHTSA about accepting ECE R95 as alternative to FMVSS 214.
- Behind the concept of Functional Equivalence.
- Believes EuroSID 1 needs to be fixed and is willing to work to examine any proposals to achieve this.
- Dummy should be WorldSID in the long term with 50% male (Fr): 5% female (Rr).
- Side impact test procedure should come out of this IHRA group.
- Injury criteria out of IHRA Biomechanics Group.
- 2010 to 2015 time frame for long term solution (global side impact harmonised. Standard in regulation around the world).
- USA manufacturers do more in their side impact designs to compensate for FMVSS 214 inadequacies.

## EUROPE

Mr Lowne summarised the European position from the EEVC perspective:

- Have had reports of 'Flat Topping" and have asked reports of flat-topping in European certification tests (problem was there in the prototype).
- Acknowledged problem of alternative load paths through back plate and abdomen.
- V*C reached maximum when rib velocity is high but the displacement is still low.
- Have to look at what research is being carried out and what regulators might accept.
- Certification regime (self certification versus type approval) may affect number of tests required.
- In 1989, EEVC finalised European Directive test procedure and presented at ESV. Tests on same vehicle model showed ECE R95 gave higher injury criteria levels.
- Current research efforts looking at the items agreed to be reviewed in Reg 95
  - impact speed
  - height of MDB face
  - test seating position
  - V*C applicability
  - look at injury criteria for other body regions for inclusion
  - effect of side airbags on current injury criteria
- SID 2000 project.

Mr Justen stressed that he could only give the Daimler Benz view as a consolidated ACEA position had not been determined:

- Currently need to fulfil 2 different standards (FMVSS and ECE).
- Short term solution could be initial acceptance of either.
- Long term solution would be a world wide standard based on European standard.

## JAPAN

Mr Mizuno summarised the Japanese Ministry of Transport's position:

- JMoT supported the JAMA proposal and that harmonisation was important.
- Next month Japan would introduce the ECE Regulation 95
  - with V*C omitted
  - new vehicle approvals only
  - 9/2000 all models
  - 700mm R-point exemption included
  - imported cars comply by 10/2003

Mr Uchimura stated that:

- Supported harmonisation in dummy and test procedure areas.
- Supported AAMA/AIAM/IIHS petition of accepting the ECE Regulation and/or of EuroSID 1 in FMVSS214.
- Funding for dummy evaluation of WorldSID and "fixed" EuroSID 1 and SIDIIs.

## REAL WORLD CRASH DATA

The Chairman sought the views of members on what was being done in the various regions to solicit real world crash data to define what types of side impacts were occurring and the types of injuries being sustained by body region.

The Chairman advised that Mr Dalmotas was nominated in the IHRA Biomechanics Group to coordinate the collection of real world crash data to determine the types of crashes and injuries the side impact dummy would have to be capable of measuring. Mr Dalmotas agreed to do the same task for this group and asked members to provide details by 19 October 1998. **[ACTION]**

Mr Lowne said that an EC crash review was due to be finalised by December 1998. This would include information on whether a pole test should be added.

Mr Kanianthra advised that NHTSA has established Crash Injury Research and Engineering Network (CIREN) centres through which more detailed medical and crash information is collected and analysed to obtain additional information on injury causation. This data could be useful for in depth analyses of side crashes.

Mr Dalmotas said that Transport Canada has directed a study to find crashes that resemble the regulations in force.

Mr Justen undertook to get figures from ACEA on vehicle to vehicle and vehicle into narrow object side impact crashes for next meeting. He would also provide the Daimler Benz experience of in depth crash investigation. **[ACTION]**

Mr Mizuno said he would provide the JMoT crash analysis carried out to support the forthcoming side impact regulation in Japan. He said they have many poles in Japan. Thus, he said that he could provide the pole impact crash data in Japan. **[ACTION]**

Mr Uchimura said that a pole impact study by JMoT was presented to ISO TC22/SC10 WG1/WG3 (he undertook to send it to Mr Dalmotas). He also advised that by the end of the 1998 fiscal year (March 1999) JAMA is expected to have completed a side impact study based on crashes in Japan. **[ACTION]**

### WorldSID Taskforce

Mr Hultman summarised the current position of the WorldSID Task Force work:

- Solicitations for a project manager have gone out
  - 3 proposals came back

  - 1/10/98 start
- 3 regions finalising review of current dummies and defining features. WorldSID should have functional requirements for next meeting prior to Stapp.
- 1999 to start hardware build
- Alpha-prototype by 4 January 2000

Mr Lowne indicated that EEVC had developed a rating system for biofidelity targets for side impact dummies which was presented at the 12th ESV in Paris.

## WORK PROGRAM

As an introduction to developing a work program for the working group, the Chairman summarised the information that had been presented by representatives:

- There was a need to examine real world crash data to determine the types of side impact and the injuries being sustained. This would facilitate the development of a test procedure and test device for a harmonised side impact regulation.

- There was a need to consider vehicle-to-vehicle compatibility in development of the test procedure.

- There seemed to be a short term and long term solution.

- The short term solution would be to fix the problems of EuroSID and have it accepted as an alternative dummy in other regulations.

- The long term solution would include:

  - WorldSID as the harmonised dummy family
  - Test procedure that accounts for the most common side impact crashes in the real world. Indications are that this would include a mobile deformable barrier test and a narrow fixed object test.
  - Test procedure to provide protection for a range of occupants.
  - Some form of airbag evaluation.
  - Consider the most up-to-date injury criteria.

It was agreed that the work program would include:

- Monitoring work on EuroSID1 in North America with the outcome to flow on to Europe and Asia-Pacific.

- Cooperation with other IHRA Working Group's in advanced frontal, vehicle compatibility and biomechanics, and with the WorldSID Task Force.

Mr Dalmotas suggested that a test matrix be generated to evaluate a number of passenger cars complying exclusively with FMVSS 214 and testing them to ECE R95 and vice versa. The tests might use BioSID (front) and SID IIs (rear). Mr Lowne undertook to generate the matrix together with rationale for choosing the vehicles and other parameters. It was agreed that Mr Lowne send a draft to Mr Dalmotas by 19 October 1998. This would then be discussed at the next meeting. **[ACTION]**

## OTHER BUSINESS

Mr Kanianthra suggested that a Website be set up for the side impact group in a similar fashion to other IHRA groups. It was agreed that:

- Website with a protected area for draft documents.
- Names of members but no email address.
- Photo of the Chairman.
- Draft documents in protected area.

## NEXT MEETING

The Chairman advised that the IHRA Biomechanics group would be meeting on Wednesday afternoon 4 November after the Stapp Conference in Tempe, Arizona.

On this basis, it was agreed that the next meeting of the Side Impact group would be a full day meeting on Thursday, 5 November 1998.

Mr Kanianthra volunteered NHTSA to organise a meeting room. **[ACTION]**

KEITH SEYER
05 November 1998